

REMARKS

Claims 11, 29, 41, 42, and 48 have been amended. Claims 60-64 have been added. Support for the amendments made to claims 11, 29, 41, 42, and 48, as well as the new claims may be found throughout the specification, such as at paragraphs [0067]-[0069]. No new matter has been added. Upon entry of this Amendment, claims 1-5, 9, 11-14, 17-27, 29-33, 35-37, and 41-64 are pending.

In the Office Action dated September 12, 2006, claims 11-14, 17, 18, 29-33, 35, 36, and 41-53 were rejected under 35 U.S.C. §102(e) as being anticipated by Melnychuk et al. (U.S. Patent Application Publication No. 2005/0230645). Applicants respectfully traverse this rejection.

Independent claim 11 recites a debris-mitigation system for mitigating debris particles within a lithographic apparatus. As recited by claim 11, “the debris-mitigation system is arranged to apply a magnetic field so that at least charged debris particles are mitigated, and wherein the debris-mitigation system is further arranged to apply a gradient to the magnetic field to create a volume in which the charged debris particles are substantially contained.” Melnychuk et al. does not disclose or suggest all of the features of claim 11.

Melnychuk et al. teaches an extreme ultraviolet light source that includes a debris shield. *See* Melnychuk et al. at [0167] – [0172]. Melnychuk et al. also teaches that a technique that may be used to increase the effectiveness of the debris shields includes applying a magnetic field in the region of the debris shield and the region between the pinch and the shield. *See* Melnychuk et al. at [0174]. Although Melnychuk et al. teaches that the current that is provided to a coil to induce a high magnetic field in the axial direction may be pulsed to achieve a high induction field strength, Melnychuk et al. does not disclose or suggest that a gradient may be applied “to the magnetic field to create a volume in which the charged debris particles are substantially contained,” as recited by claim 11.

Accordingly, Applicants respectfully submit that claim 11 and the claims that depend from claim 11 are patentable over Melnychuk et al., and respectfully request that the rejection to claims 11-14, 17, and 18 be withdrawn. Applicants respectfully submit that new claim 60 is patentable over Melnychuk et al. in view of its dependency from claim 11 and the additional features recited therein.

Independent claim 29 recites a method for mitigating debris as produced during use of at least a part of a lithographic apparatus. As recited by claim 29, the method includes “applying a magnetic field so that at least charged debris particles are mitigated; and applying

a gradient to the magnetic field to create a volume in which the charged debris particles are substantially contained.” Melnychuk et al. does not disclose or suggest all of the features of claim 29.

Melnychuk et al. is discussed above. Melnychuk et al. teaches pulsing a current to a coil to induce a high induction strength in a magnetic field. Melnychuk et al. does not disclose or suggest “applying a gradient to the magnetic field to create a volume in which the charged debris particles are substantially contained,” as recited by claim 29.

Accordingly, Applicants respectfully submit that claim 29 and the claims that depend from claim 29 are patentable over Melnychuk et al., and respectfully request that the rejection to claims 29-33, 35, and 36 be withdrawn. Applicants respectfully submit that new claim 61 is also patentable over Melnychuk et al. in view of its dependency from claim 29 and the additional features recited therein.

Independent claim 41 recites a lithographic method that includes, *inter alia*, “generating a magnetic field to interact with said charged debris particles; and applying a gradient to the magnetic field to create a volume in which the charged debris particles are substantially contained.” Melnychuk et al. does not disclose or suggest all of the features of claim 41.

Melnychuk et al. is discussed above. Melnychuk et al. simply does not disclose or suggest “applying a gradient to the magnetic field to create a volume in which the charged debris particles are substantially contained,” as recited by claim 41.

Accordingly, Applicants respectfully submit that claim 41 is patentable over Melnychuk et al., and respectfully request that the rejection to claim 41 be withdrawn. Applicants respectfully submit that new claim 62 is also patentable over Melnychuk et al. in view of its dependency from claim 41 and the additional features recited therein.

Independent claim 42 recites a lithographic apparatus that includes, *inter alia*, “a debris-mitigation system that mitigates debris particles which are formed during use of at least a part of the lithographic apparatus, wherein the debris-mitigation system is arranged to apply a magnetic field so that at least charged debris particles are mitigated, and wherein the debris-mitigation system is further arranged to apply a gradient to the magnetic field to create a volume in which the charged debris particles are substantially contained.” Melnychuk et al. does not disclose or suggest each and every feature of claim 42.

As discussed above, Melnychuk et al. does not disclose or suggest that its debris shield is arranged “to apply a gradient to the magnetic field to create a volume in which the charged debris particles are substantially contained,” as recited by claim 42.

Accordingly, Applicants respectfully submit that claim 42 and the claims that depend from claim 42 are patentable over Melnychuk et al., and respectfully request that the rejection to claims 42-47 be withdrawn. Applicants respectfully submit that new claim 63 is also patentable over Melnychuk et al. in view of its dependency from claim 42 and the additional features recited therein.

Independent claim 48 recites a lithographic apparatus that includes, *inter alia*, “a debris-mitigation system that mitigates debris particles which are formed during use of at least a part of the lithographic apparatus, wherein the debris-mitigation system is arranged to apply a magnetic field so that at least charged debris particles are mitigated, and wherein the debris-mitigation system is further arranged to apply the magnetic field dynamically with a predetermined frequency to create a volume in which the charged debris particles are substantially contained.” Melnychuk et al. does not disclose or suggest all of the features of claim 48.

Melnychuk et al. is discussed above. Although Melnychuk et al. teaches the current that is applied to a coil may be pulsed to induce a magnetic field that has a high induction field strength, the magnetic field of Melnychuk et al. is not applied “dynamically with a predetermined frequency to create a volume in which the charged debris particles are substantially contained,” as recited by claim 48.

Accordingly, Applicants respectfully submit that claim 48 and the claims that depend from claim 48 are patentable over Melnychuk et al., and respectfully request that the rejection to claims 48-53 be withdrawn. Applicants respectfully submit that new claim 64 is also patentable over Melnychuk et al. in view of its dependency from claim 48 and the additional features recited therein.

In the Office Action, claims 19 and 37 were objected to as being dependent upon a rejected base claim. Applicants acknowledge with appreciation that claims 19 and 37 would be allowable if rewritten in independent form, and that claims 1-5, 9, 20-27, and 54-59 are allowed. However, in view of the foregoing, Applicants respectfully submit that all of the pending claims are allowable.

All rejections and objections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly

solicited. If any point remains at issue which the Examiner feels may best be resolved through a personal or telephone interview, please contact the undersigned at the telephone number below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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